A. RYDQUIST.

CHECK CONTROLLED VENDING MACHINE.

APPLICATION FILED JAN. 31, 1916.

1,310,504.

Patented July 22, 1919.

4 SHEETS—SHEET 1.

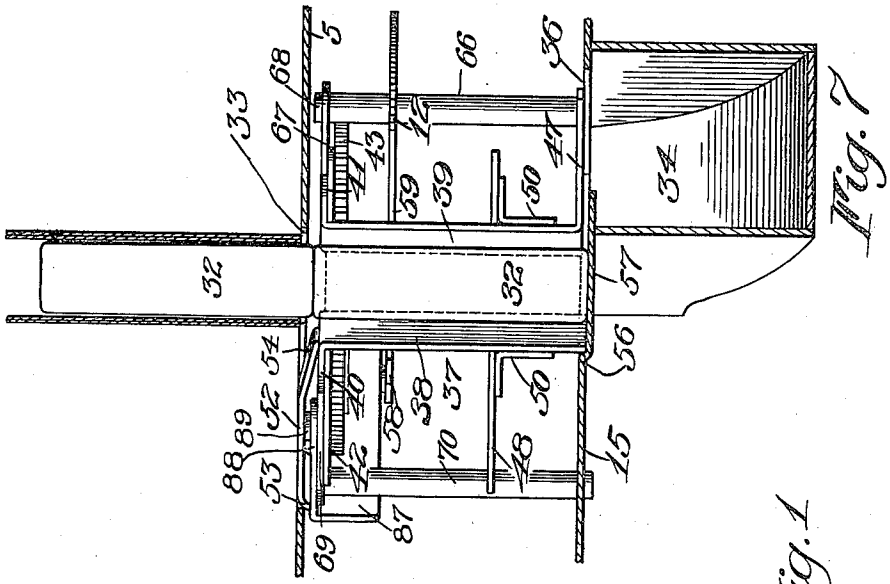


Fig. 7

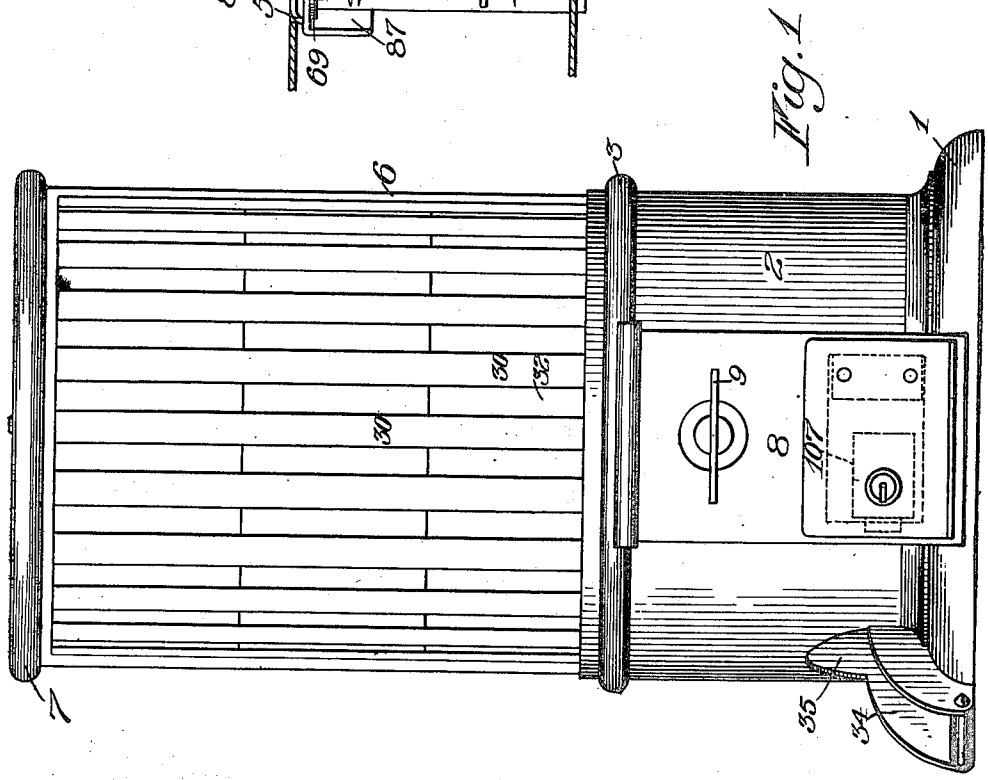


Fig. 1

WITNESSES:

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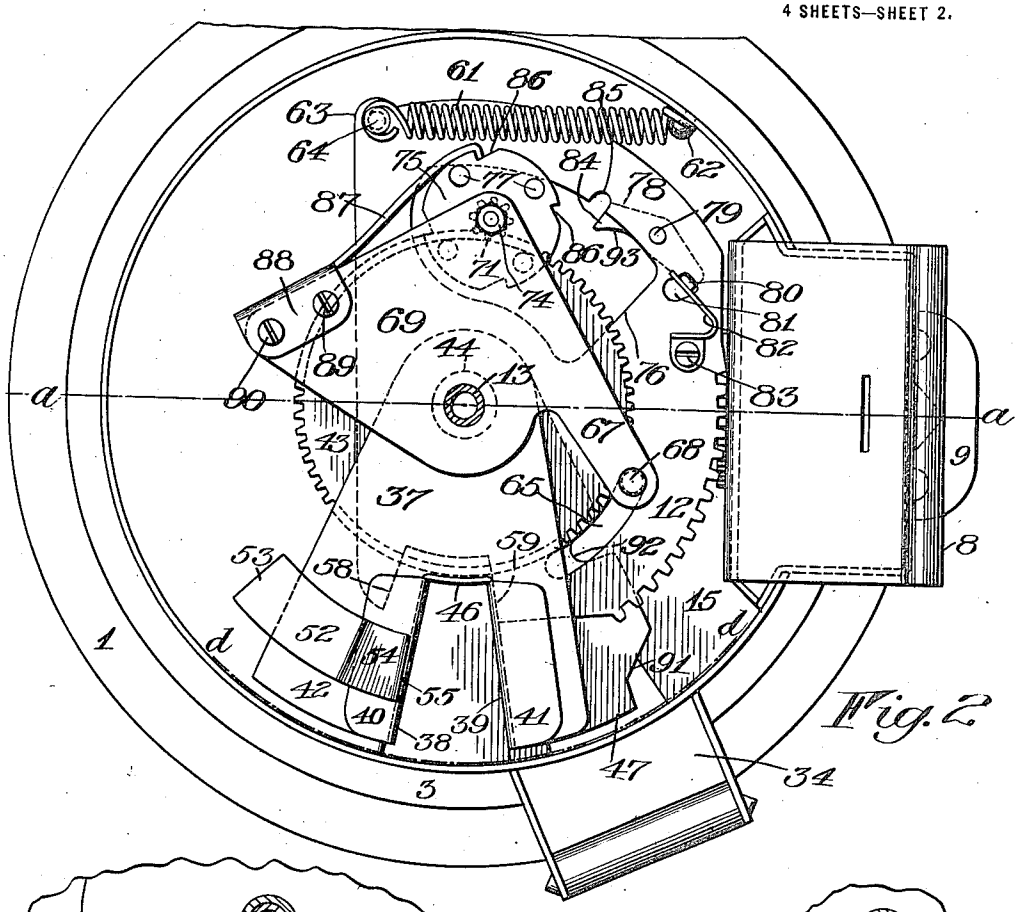


Fig. 2.

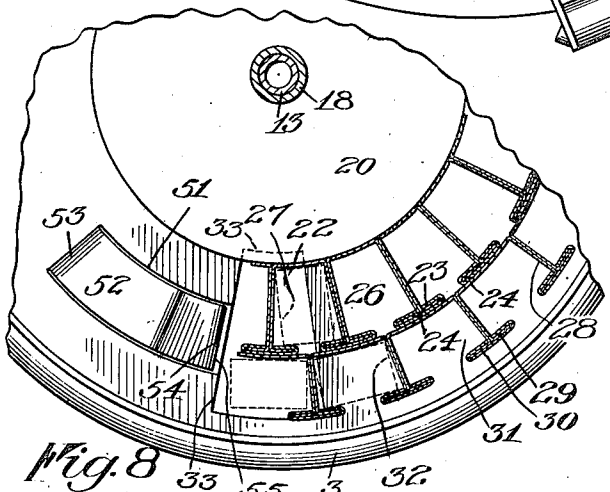


Fig. 8

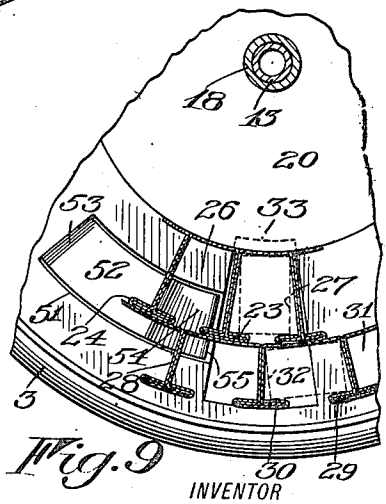


Fig. 9

WITNESSES:

INVENTOR

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A. RYDQUIST.

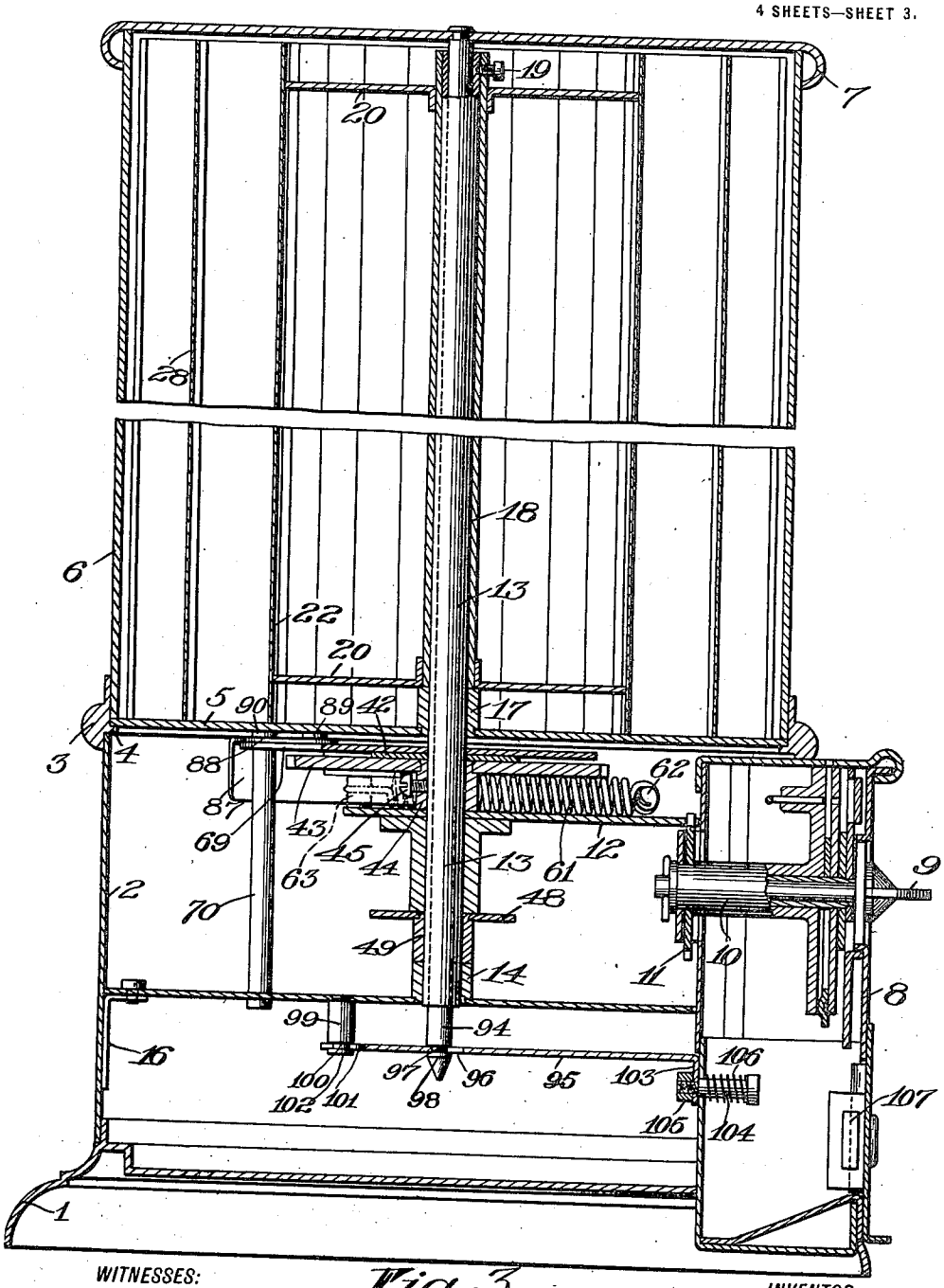
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4 SHEETS—SHEET 3.



WITNESSES:

Fig. 3

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CHECK CONTROLLED VENDING MACHINE.

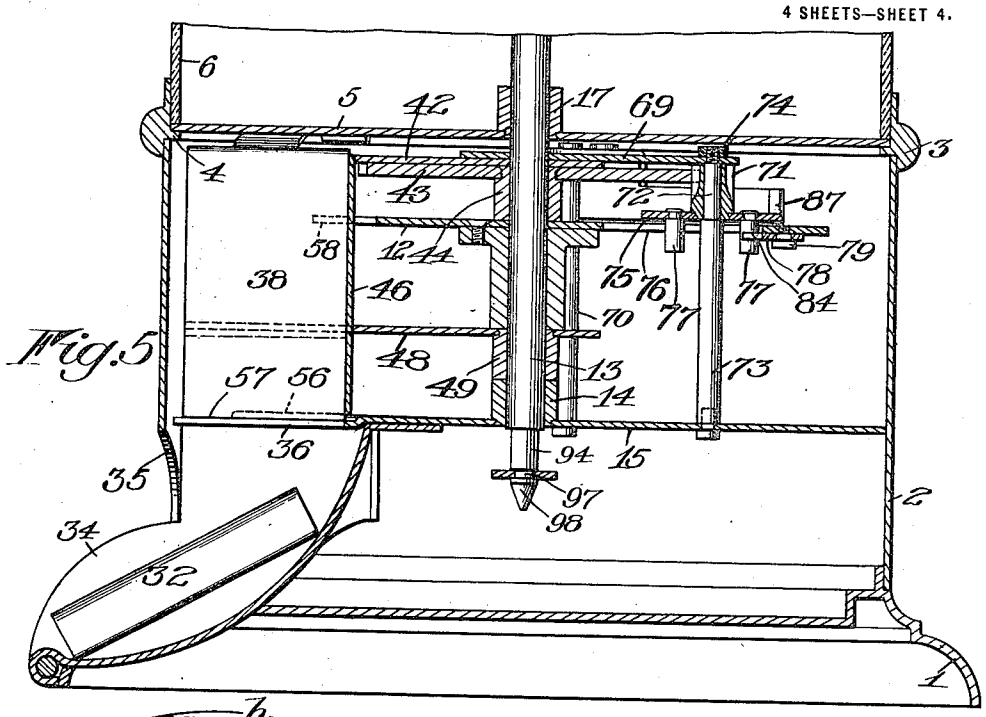
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4 SHEETS—SHEET 4.

Fig. 5



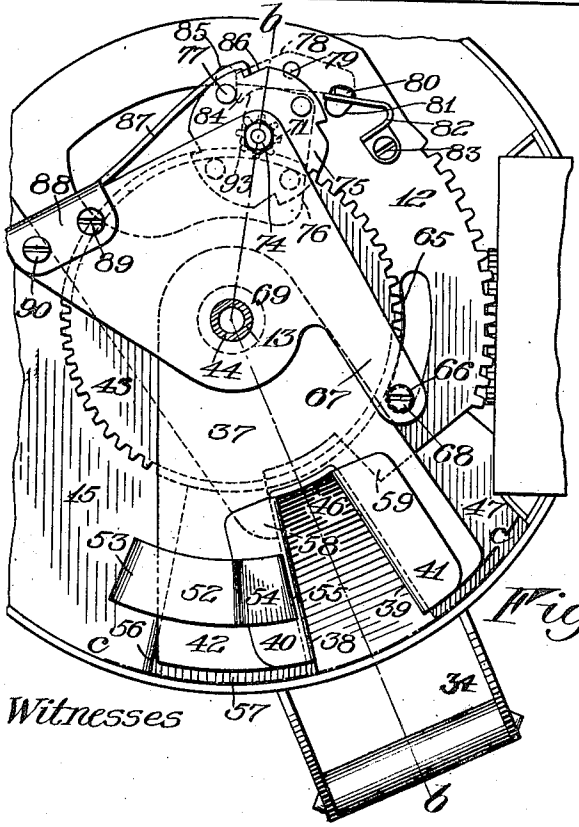


Fig. 4

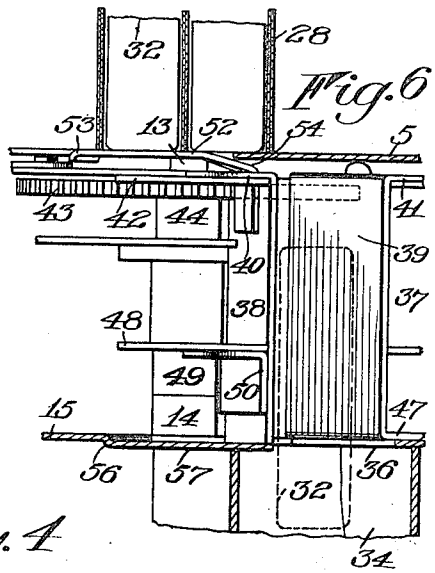


Fig. 6

Witnesses

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UNITED STATES PATENT OFFICE.

ADOLPH RYDQUIST, OF ROCHESTER, NEW YORK.

CHECK-CONTROLLED VENDING-MACHINE.

1,310,504. Specification of Letters Patent. Patented July 22, 1919.

Application filed January 31, 1916. Serial No. 75,220.

To all whom it may concern:

Be it known that I, ADOLPH RYDQUIST, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Check-Controlled Vending-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to coin controlled vending machines and has for its object to provide a machine of the portable type which is especially adapted for the selling of small packages of goods, such as gum, candy and like commodities, and is especially designed for use upon stands or counters in stores and other public buildings, where it is not necessary to provide means for fastening the machine to some stationary object to secure it against removal. A further object of the invention is to provide in a machine of this class a stationary table inclosed preferably within a glass cylinder and adapted to support a series of superimposed packages visibly and rotatably arranged in the cylinder in spaced columns therein upon the table. To these and other ends, the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is an elevational view of a machine constructed in accordance with my present invention;

Fig. 2 is a top plan view of the machine, with the table for supporting the goods removed to more clearly show the mounting of the operating mechanism;

Fig. 3 is a sectional elevation taken on line *a*—*a* of Fig. 2;

Fig. 4 is a horizontal plan view similar to Fig. 2 showing the operating mechanism in position to cause the discharge of one of the packages of goods held by the machine;

Fig. 5 is a sectional elevation taken on line *b*—*b* of Fig. 4;

Fig. 6 is a sectional elevation taken on line *c*—*c* of Fig. 4;

Fig. 7 is a sectional elevation taken on line *d*—*d* of Fig. 2;

Fig. 8 is a horizontal plan view of a portion of the table for supporting the goods, showing the relative arrangement of containers for dividing the receptacle into package receiving columns with the delivering mechanism in the position shown in Fig. 2, and

Fig. 9 is a similar view with the delivering mechanism in the position shown in Fig. 4.

Similar reference numerals throughout the several views indicate the same parts.

In carrying out my present invention I have constructed a machine especially adapted for use on counters, show cases, or stands in stores and other public buildings for the purpose of dispensing small packages of candy, chewing gum and other commodities arranged to be delivered to a purchaser upon the operation of the machine after the insertion therein of a proper coin for such purpose.

The invention as illustrated in the present embodiment comprises a base 1 upon which is mounted a mechanism casing 2 supporting a ring 3 having an inwardly projecting flange 4, upon which is mounted a stationary goods supporting table 5. Mounted on the table and within the wall of the ring 3 is positioned a casing 6, preferably formed of glass and provided for the purpose of protecting merchandise to be carried by the table 5. The casing 6 is provided with a cover or top 7 as shown in Fig. 1. Projecting into the mechanism casing as clearly shown in Figs. 2 and 3, is a housing 8 carrying any approved form of check or coin carrier mechanism operable by the turning of a handle 9 on a shaft 10 when a proper coin or check has been inserted in the mechanism. The shaft 10 is arranged to project beyond the rear wall of the housing 8 and carries a gear wheel 11 arranged to operate an actuator in the form of a segmental gear 12 loosely mounted on a shaft 13 and supported on a flanged hub carried by the shaft. The bottom of the shaft 13 is journaled in a bearing 14 carried by a plate 15 mounted on a bracket 16 supported upon the inner wall of the casing 2. A bearing 17 is also provided for the shaft 13 and is rigidly connected to the table 5 as shown in Fig. 3. Superimposed upon the bearing 17 and surrounding the shaft 13 is a sleeve 18 held rigid upon the shaft by means of a pin 19.

Mounted upon the sleeve 18 at the top and bottom thereof are circular plates 20

positioned interiorly of and connected with a series of substantially U-shaped package containers 22 having inwardly extending flanges 23 at their sides, the flanges of the adjacent walls of the U-shaped members being held by a connection 24 positioned in front of the flanges and extending around the edges to the rear faces thereof, as shown in Figs. 8 and 9. A second series of U-shaped package containers 28 are mounted above the table 5 exteriorly of and in contact with the outer faces of the connections 24 whereby package receiving columns or closures 26 are formed in which said packages indicated at 27, are positioned one upon the other through the open end of the casing 6, the packages being supported by the table 5. The package containers 28 are provided with inwardly turned flanges 29 at their sides, the flanges of the adjacent walls of said U-shaped members being held by a connection 30 similar in construction to the connection 24 above described. The U-shaped containers 28 are arranged centrally of the radial walls of the containers 22 as shown in Figs. 8 and 9, and form the package receiving columns 31 in which the packages indicated at 32, are positioned one above the other on the table 5. The longer sides of the containers 22 and 28 are positioned substantially at right angles to each other as shown in Fig. 8, whereby an equal number of the columns 26 and 31 are provided. The containers are adapted to revolve above the table 5 through the medium of the shaft 13 arranged to be rotated in a manner which will be hereinafter described. The table 5 is provided at one side with an opening 33 through which the packages are discharged preliminarily to being discharged into a chute 34 at the bottom of the casing 2 when the operation of the machine is properly effected. The opening 33 is tapered so that its outer end will be wider than its inner, in order to accommodate the outer packages 32 which are placed with their longer sides substantially at right angles to the sides of the opening. The chute 34 is positioned through an opening 35 in the wall of the casing 2 as shown in Figs. 1 and 5, and registers with an opening 36 formed in the plate 15 through which one of the packages 27 is shown in discharged position. The opening 33 in the table 5 is placed a little to one side of the opening 36 and is adapted to normally register with a pocket formed in an oscillatory delivering device 37. The pocket is formed between a pair of guide plates 38 and 39 having top flanges 40 and 41 respectively, carried by a supporting plate 42 loosely mounted on the shaft 13 and resting on a gear wheel 43 supported by a hub 44 surrounding the shaft 13 and rigidly connected therewith by means of a screw 45. The guide plates 38 and 39 are preferably formed integral with a wall 46 extending downwardly with the guides from a point adjacent the bottom of the table 5 to the top of the plate 15. The guide plate 39 is provided with an outwardly turned bottom flange 47 normally covering the opening 36 in the plate 15 to prevent maliciously inclined persons from tampering with the machine as well as to keep out dust and dirt which might tend to collect therein. A supporting plate 48 carried by a hub 49 loosely mounted on the shaft 13 is provided for the purpose of supporting the lower portion of the guide plates 38 and 39 and is cut to receive the outer faces of said plates, which are connected to the supporting plate 48 by means of suitable angles 50 which may be riveted or otherwise secured to the guides 38 and 39 as well as to the plate 48. Connecting with the opening 33 in the table 5 is an elongated slot 51 normally closed by a movable package supporting plate 52 curved downwardly to abut the table 5 at the point 53, as shown in Fig. 7. The opposite end of the package supporting plate is arranged to slope downwardly at 54 to form an incline and to extend through a slot 55 in the flange 40 to connect with the outer face of the guide plate 38, as shown in Figs. 6 and 7. The plate 15 is offset at 56 to form a locking abutment for the oscillatory delivering device 37 in addition to the abutment 53 to be engaged by the bottom edge of the guide plate 38 when the same is in its normal position, said offset portion terminating in a package receiving platform 57. The platform 57 also serves to allow the packages to clear the bottom of the table 5 when the same are moved to the right from the position shown in Fig. 7. The slot 51 which the package supporting plate 52 normally closes is positioned centrally of the bottom of the series of containers 22 and 28, extending partly under the packages in each set of containers so that when the slot is uncovered by movement to the right of the supporting plate 52 enough of the material of the table 5 will be left upon opposite sides of the slot to support the packages in both series of columns.

The gear segment 12 is provided with a notch or cut at the sides of which are formed operating members 58 and 59 for moving the guides 38 and 39 and the supporting plate 52 in opposite directions with respect to the chute 34. The operating member 59 normally holds the oscillatory delivering device 37 in the position shown in Fig. 2 through the medium of a spring 61, one end of which is attached to the casing 2 by means of a screw 62 and the other end to a corner 63 of the segment 12 by means of a screw 64. In the normal position of the segment 12 the operating member 58 is

spaced far enough away from the guide plate 38 to allow sufficient movement of the segment by the coin controlled mechanism to determine, when a coin has been inserted therein, whether or not the same is of proper shape and size before movement of the oscillatory delivering device is begun by said operating member 58. By this means, if the coin is not a proper one, the same may be ejected from the coin controlled mechanism without having served to cause the delivery of one of the packages held by the machine. The segmental gear 12 is provided with a circular slot 65 through which a post 66 extends, one end of which is secured to the plate 15 by means of a suitable screw, or otherwise, and the other end of which extends beneath an arm 67 and is connected therewith by means of a screw 68. The arm is an extension of a stationary plate 69 resting upon the extension plate 42 which is movably mounted upon the shaft 13. The shaft 13 also extends through the stationary plate 69, the latter being supported at one side by a second post 70 carried by the plate 15. The gear wheel 43, rigidly connected with the shaft 13, is adapted to rotate the same through the medium of a pinion 71 rotatably mounted on the reduced end 72 of a post 73, one end of which connects with the bottom plate 15 and the other with the stationary plate 69. A nut 74 serves to clamp the plate 69 upon the reduced portion 72 of the post 73. The pinion 71 is rigidly connected with a disk 75 placed immediately above the gear segment 12 over an opening 76 formed through the segment. A plurality of pins 77 project downwardly through the opening 76, the same being rigidly connected with the disk 75 near the periphery thereof. A pawl 78 is pivoted beneath the segment at 79, one end of which is provided with an upstanding member 80 projecting through an elongated opening 81 formed in the segment.

The pawl 78 is normally held in the position shown in Fig. 2 by a spring 82 positioned on the top side of the segment and held in position thereon by means of a screw 83. The other end of the pawl is provided with a lateral projection 84 extending beneath one side of the opening 76 in the path of one of the pins 77. A notch 85 is formed in the segment, at the end of the pawl having the lateral projection, to receive one of the pins 77 during the time the segment is being turned to the right to the position indicated in Fig. 4. The turning of the segment to the right causes the projection 84 to engage one of the pins 77 to cause the rotation of the pinion 71 which rotates the gear 43 thereby turning the shaft 13 and rotating the package containers in an opposite direction to that in which the oscillatory delivering device 37 is being moved by the segment. The disk 75 is provided with a plurality of notches 86 adapted to be engaged by a spring catch 87 to prevent the turning of the disk in a direction other than that described. The spring catch 87 is provided with a flanged plate 88 which is secured to the stationary plate 69 by means of suitable screws 89 and 90, the latter also connecting with the upper end of the post 70. The flange 47 of the guide plate 39 is cut as shown at 91 to clear the corner of the housing 8, containing the check controlled mechanism when the oscillatory delivering device 37 is advanced toward the chute 34. The flange 47 is arranged to engage the post 66 in a notch 92 to limit the movement of the delivering device 37 in the direction of the chute 34. Likewise one end of the slot 65 serves to limit the forward movement of the segment 12 by engaging the post 66. The pawl 78 at the rear of the lateral projection 84 is curved or inclined as shown at 93 for the purpose of causing the pawl to be pushed outwardly by one of the pins 77 during the return of the segment to its normal position by the action of the spring 61. As soon as the pawl has disengaged the pin 77, during the return of the segment, the spring 82 forces the pawl back to its normal position as shown in Fig. 2.

The top or cover 7 is secured upon the casing 6 by means of a locking rod 94 rigidly connected with the cover and extending through the hollow shaft 13 to connect with a locking plate 95 having formed therein an elongated slot 96 adapted to receive a reduced portion 97 on the locking rod. The reduced portion 97 is provided with a head 98 adapted to normally engage the lower face of the plate 95 at one end of the slot 96 as shown in Fig. 3. The plate 95 is slidably mounted on a stud 99 rigidly connected with the plate 15 and having a reduced end 100 positioned in an elongated slot 101 formed in the back end of the plate 95, the latter being supported at this point by a head 102 on the reduced portion 100 as shown in Fig. 3. The forward end of the plate 95 is bent downwardly to form a flange 103 normally resting against the rear face of the back wall of the mechanism casing as shown. A bolt 104 is positioned through said back wall and secured to the flange 103 by means of a nut 105. A spring 106 normally holds the bolt and the plate 95 in locking position with respect to the locking rod 94 as shown in Fig. 3. To release the locking rod for the purpose of removing the cover 7 it is only necessary to push the bolt and plate 95 rearwardly which may be done upon unlocking the door 107 at the bottom of the mechanism casing.

In the complete operation of my improved delivering mechanism, after the packages have been positioned in the series of con-

tainers 22 and 28 and a proper coin inserted in the check controlled mechanism, the handle 9 is turned to the right, thereby moving the segment 12 in the same direction to cause the operating member 58 to engage the guide plate 38 of the delivering device 37. In this way the delivering device is moved toward the chute 34, carrying with it the package resting on the platform 57 between the guides 38 and 39. Superimposed upon this package is a similar package or packages as shown in Fig. 7. As the oscillatory delivering device 37 is advanced the package supporting plate 52 also advances and while the lower package is being moved from under the upper, the incline portion 54 of the supporting plate begins to move under the bottom of the superimposed package. In the meantime the end 84 of the pawl 78 engages one of the pins 77 and begins to rotate the pinion 71 and the gear 43, the latter moving the shaft 13 and package containers in an opposite direction to that in which the delivering device 37 is moving. During this operation the superimposed package is moved up the incline 54 to the top of the supporting plate and the lower package is pushed off of the platform 57 through the opening 36 into the chute 34. The oscillatory delivering device is then returned to its normal position by the action of the spring 61 and another package drops into the delivering device from one of the containers in the series opposite to the one from which the last package was discharged. In this way the packages are alternately discharged first from one series of containers and then the other as long as any of the packages remain in the machine.

I claim as my invention:

1. In a vending machine, the combination with an actuator, a package supporting table provided with an opening therethrough, a plurality of open ended movable package containers mounted above the table adapted to successively register with said opening, the containers being operatively connected with the actuator and means for receiving and discharging packages from the containers through said opening, said means being operatively connected with the actuator and adapted to move a package held therein a predetermined amount before movement is imparted to the containers.

2. In a vending machine, the combination with an actuator, a package supporting table provided with an opening therethrough, a plurality of open ended movable package containers mounted above the table arranged to successively register with said opening, said containers being operatively connected with the actuator, and means for receiving and discharging packages from the containers through said opening, said means being operatively engaged by the actuator after a predetermined movement of the latter has been effected.

3. In a vending machine, the combination with an actuator, a package supporting table provided with an opening therethrough, a plurality of movable package containers adapted to successively register with said opening, means interposed between the containers and the actuator adapted to be operatively engaged by the actuator after a predetermined movement of the same has been effected whereby said containers are moved, a delivering device open at each end and adapted to normally register with the opening in said table, a package receiving platform at the bottom of the delivering device arranged to normally support a lowermost package within the delivering device upon which a similar package is supported in one of the containers through said opening, a packages supporting plate carried by the delivering device, said delivering device being operatively connected with the actuator, whereby upon movement of the latter the delivering device will move the lowermost package in an opposite direction to the movement of the containers before the containers are moved, thereby causing said package supporting plate to move under the package superimposed upon the lowermost package as the latter is moved by the delivering device, the containers thereafter operating to move the superimposed package away from said opening upon said supporting plate to deliver the package to the table.

4. In a vending machine, the combination with an actuator, a package holder comprising inner and outer receptacles arranged circumferentially with their shorter axes at substantially right angles to each other, open at their lower ends, a package supporting table having an opening with which said receptacles are adapted to register, a package receiving platform spaced from said opening, and a delivering member for moving the packages upon the platform.

5. A vending machine comprising an actuator, a package supporting platform having a discharge opening therethrough, a revoluble shaft, a plurality of package containers superimposed upon said table and operatively connected with said shaft, a gear for driving said shaft, a pinion for actuating said gear, a segment operatively connected with said pinion and arranged to be driven in one direction by the actuator, and means for returning the segment to normal position when moved by the actuator.

6. A vending machine comprising an actuator, a package supporting platform having a discharge opening therethrough, a revoluble shaft, a plurality of superimposed package containers upon said table oper-

atively connected with said shaft, a package delivering member beneath said table, a gear for driving said shaft, a pinion for actuating said gear, and means operatively connected with said pinion and said delivering member and adapted to be driven by said actuator.

7. A vending machine comprising an actuator, a package supporting platform having a discharge opening therethrough, a revoluble shaft, a plurality of package containers superimposed upon said table and operatively connected with said shaft, a package delivering member beneath said table, a gear rigid upon said shaft, a pinion meshing with said gear, a revoluble plate operatively connected with said pinion and having a plurality of spaced abutments thereon, a segment operatively connected with said actuator and arranged to move said delivering member in opposite directions, a spring for returning said segment to normal position, a spring actuated pawl upon the segment adapted to successively engage said abutments for the purpose of actuating said plate step-by-step, and means for locking the plate when actuated by said pawl.

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